



ALPHATRON
Marine



NFU Tiller

Operation Manual

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Preface

The Alpatron AlphaPilot MFM system is a type approved heading control system, designed to fit vessels of any size, including high speed crafts.

The NFU Tiller is part of the AlphaPilot MFM system and is used for Emergency NFU steering.

- Thoroughly read this operation manual before operating the equipment.
- We recommend keeping this manual nearby the equipment to ensure ready access to it.



Revision History

Revision No.	Date	Description	Author
1.0	18-04-2018	First release	J. Kreeft

Glossary

The glossary contains a list of abbreviations and a list of definitions.

Abbreviations

Abbreviations as used in this manual are explained in the table below.

NFU	Non-Follow-Up
PS	Port Side
SB	Starboard Side
STBY	Standby

Definitions

The meaning of standard definitions as used in this manual are explained in the table below.

Alarm	Audio and visual signal announcing a condition requiring attention. The audio continues until acknowledged. The acoustic noise pressure of the alarm is at least 75 dBA but not greater than 85 dBA at a distance of 1 m (IEC 60945). The visual indication continues until the alarm condition is removed.
AlphaPilot MFM	Alphatron brand name for the heading control system.
Autopilot	A Heading Control System.
Indication	Visual display of any message to the user which may be accompanied by a low intensity acoustic signal to gain attention.
Steering mode selector	A switch provided for the selection of manual steering modes and automatic steering devices.
Tiller	A device that is used to turn the rudder, which then steers the boat.

Safety Information

The signal words DANGER, WARNING and CAUTION used in this manual indicate the degree of hazard that may be encountered by the user. These words are defined as follows:

**DANGER**

Indicates a hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

**WARNING**

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION**

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

The signal word NOTICE used in this manual indicates information considered important but not related to injury. It is typically used to prevent damage to equipment or property.

To safely operate this system, the following DANGERS, WARNINGS, and CAUTIONS must be adhered to. Failure to comply with the precautions or with specific dangers, warnings, and cautions elsewhere in this manual violates safety standards of design, manufacture, and intended use of the equipment. ALPHATRON MARINE assumes no liability for the customer's failure to comply with these requirements.

**WARNING**

Do not disassemble or modify the equipment. Otherwise, it may cause a fire, or you may suffer an electrical shock.

**WARNING**

Immediately turn off the power and disconnect the power supply cable if the equipment is generating any smoke or odour or is overheated. Immediately inform your local service agent of the symptom to have it repaired. Prolonged equipment operation under such a condition can cause a fire or electric shock.

**WARNING**

Do not place a container containing liquid on the equipment. Otherwise, it may cause a fire, or you may suffer an electrical shock if knocked over.

**WARNING**

When unplugging the instrument, be sure to remove the cord terminal correctly. If the cord is pulled, the cord may get damaged resulting in a fire or an electrical shock.



Warranty

To not to adversely affect the warranty, the following notices must be adhered to.

NOTICE Operating personnel must not remove equipment covers. Only personnel trained and certified by ALPHATRON MARINE must make component replacement and internal adjustment.

NOTICE Do not disassemble or modify the equipment. Failure to observe this instruction may cause equipment failure, and it will void the warranty.

NOTICE Any modification to this equipment without prior written permission from ALPHATRON MARINE will void the warranty.

NOTICE Installation of this product shall only be done by a certified installation company approved by either ALPHATRON MARINE or by an official ALPHATRON MARINE distributor. Acting otherwise will void the warranty.

NOTICE This product contains no operator serviceable parts. Service and repair shall only be carried out by personnel trained and certified by ALPHATRON MARINE.

NOTICE Do not place a container containing liquid on the equipment. The equipment can be damaged if knocked over.

NOTICE When cleaning the surface, do not use any organic solvent such as thinner or benzene. Otherwise, the paint and markings on the surface may get damaged. For cleaning the surface, remove the dust and debris and wipe with a clean dry cloth.

Introduction

The NFU Tiller is part of the AlphaPilot MFM system and is used for emergency NFU steering. This mode is sometimes called 'EMERGENCY NFU' or 'NFU DIRECT'. In this mode, the NFU Tiller is hardwired to the steering gear control valves.

The NFU Tiller is typically used in combination with an AlphaPilot MFM control unit.

The NFU Tiller has 1 joystick and multiple buttons:

- The alarm speaker button will illuminate when there is an alarm. The button is used to mute the speakers of the NFU Tiller and interconnected modules.
- Buttons **DIM -** and **DIM +** are used to control the brightness level of the NFU Tiller and interconnected modules.
- Button **NFU** has no function at the time of writing.
- The joystick is used to steer.



Figure 1: NFU Tiller

Enabling NFU control

When not in control, the NFU Tiller is in standby mode and joystick is disabled (the control mode indicator **STBY** is illuminated and the ring around the joystick is not illuminated).

NFU control is enabled automatically when the Mode Switch is switched to the NFU position. The control mode indicator **NFU** and the ring around the joystick will illuminate, meaning that NFU mode is enabled, and that the joystick is enabled.



Figure 2: STBY mode enabled



Figure 3: NFU mode enabled

When a non-illuminated button is pushed, the speaker produces 4 short successive beeps to indicate that the operation is not valid.

Note that button **NFU** on the Emergency NFU Tiller is never illuminated (it has no function at the time of writing).

Steering

In NFU control, the steering gear will move the rudder as per joystick movement.

Moving the joystick to PS will cause the rudder to move to PS. Releasing the joystick will stop the rudder. Moving the joystick to SB will cause the rudder to move to SB.

Alarm handling

The alarm speaker button is only illuminated when there is an internal alarm. When an alarm occurs, the alarm speaker button will flash in an uninterrupted sequence, and the speaker will beep in an uninterrupted sequence.



Figure 4: Alarm active

The alarm speaker can be muted via the alarm speaker button.

When the alarm (is read and) acknowledged on the AlphaPilot MFM control unit, then the illumination will be constant, and the speaker will be muted (if not muted already via the NFU Tiller). When the alarm is accepted (e.g. problem solved), then the illumination on the alarm speaker button will turn off.

Dimming

Buttons **DIM -** and **DIM +** are always illuminated (dimmed to a pre-set brightness level) and control is always allowed.

Push the button **DIM -** or **DIM +** button to simultaneously adjust the brightness level of all indicators on the NFU Tiller and interconnected modules.



Alarm speaker and lamp test

Simultaneously push and hold buttons **DIM -** and **DIM +** to test the alarm speaker and the indicators; The alarm speaker will beep continuously and all indicators (buttons, control mode indicators, and ring around the joystick) will illuminate continuously, until the buttons are released.